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REMARKS

Claims 1-28 are pending in this application. By this Amendment, claims 7, 8, 14, 15, 27, and 28 and the specification are amended to correct a minor typographical error. No new matter has been added. In particular, the equations are amended to conform to the description presented in the specification from page 7, line 11 through page 9, line 14. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

Applicants gratefully acknowledge the Office Action's indication of allowable subject matter in claims 7, 8, 14, 15, 27, and 28. However, for the reasons set forth below, Applicants respectfully assert that all of the claims are directed to allowable subject matter and that the application is in condition for allowance.

Initially, Applicants assert the finality of the Office Action is improper because it offers a new ground of rejection not present in the original Office Action and not necessitated by amendment. In particular, the original Office Action did not provide a ground in Khullar et al. for constructing a first decision statistic based on a first hypothesized modulation type including interference suppression based on the received signal, as recited in independent claim 9. The new Office Action alleges such is disclosed in element 70(n) without further explanation. However, element 70(n) does not disclose "constructing a first decision statistic based on a first hypothesized modulation type including interference suppression based on the received signal." Element 70(n) only discloses "Synchronization Channel Estimation." In fact, Applicants assert the Office Action admits element 70(n) does not disclose the feature of claim 9 because the Office Action contradicts itself in that it also alleges element 70(n) discloses the claimed feature of "generating a second decision statistic based on the phase rotated received signal" in claim 1. This feature is different from the feature of claim 9. Therefore, the Office Action appears to offer a random element in Khullar et al. to make up for the deficiencies of the first Office Action to avoid providing Applicants a fair opportunity to address the new ground of rejection. Thus, the finality of the Office Action is improper.

The Office Action maintains the rejection, under 35 U.S.C. § 102, claims 1-6, 9-13, and 16-26 over Khullar et al. (U.S. Patent No. 6,400,928). The Office Action also rejects, under 35

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U.S.C. § 103, claims 1-6, 9, 11-13, 16, and 18-26 over Khullar et al. These rejections are respectfully traversed.

In the Response to Amendment section, the Office Action alleges, "An embodiment of the claimed embedded interference-canceling algorithm is described in the present specification to use a training sequence. See page 3, 3rd paragraph. Because Khullar et al also teaches generating a correlation quality measure (reading on the decision statistic) using a training sequence for modulation detection, it is seen that the correlation quality is generating using an embedded interference-canceling algorithm in the Khullar et al patent..." Applicants disagree.

Initially, Applicants cannot ascertain what the Office Action is referring to when it states "See page 3, 3rd paragraph." In particular, the third full paragraph on page 3 only states "Fig. 3 is an exemplary illustration of a Gray-encoded 8-PSK constellation according to one embodiment." This does not describe an embedded interference canceling algorithm. Thus, the foundation of the Office Action's argument is flawed.

Furthermore, Applicants assert Khullar et al. does not disclose the correlation quality is generating using an embedded interference-canceling algorithm, as alleged by the Office Action. In fact, the Office Action appears to admit such is not taught because the Office Action engages in a convolution to allege such is implied or inferred from Khullar et al. Unfortunately, such is not true. In particular, the correlation quality measure referred to by Khullar et al is understood to one of ordinary skill in the art to be the standard correlation defined in standard telecommunication text books. Using the notation in the original specification, these correlation measures can be written as $\varepsilon_0 = \mathbf{b}^T \mathbf{Z}_0 \mathbf{Z}_0^T \mathbf{b}$ and $\varepsilon_1 = \mathbf{b}^T \mathbf{Z}_1 \mathbf{Z}_1^T \mathbf{b}$ for GMSK and 8-PSK respectively. Based on which of these measures is larger, the corresponding modulation is chosen. These measures assume that the interference is white and has no structure to enable interference cancellation. In fact, the final Office Action does not show a clear understanding of standard terminology used in telecommunication literature. In particular, those skilled in the art would clearly understand from a reading of the claims in Khullar, et al. that the "correlation quality measure" described in Khullar, et al. refers to standard correlation measures and not the claimed feature. More particularly, Khullar et al. does not disclose, and one of ordinary skill in the art would not infer that one could replace those measures with other measures like the claimed

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features. It is also not taught that an interference canceling algorithm can be embedded to come up with an improved measure such as those claimed. Thus, Khullar et al. does not disclose the correlation quality is generating using an embedded interference-canceling algorithm.

Applicants original assertions are included below:

Applicants assert that Khullar et al. does not disclose or suggest generating a decision statistic based on the received signal the decision statistic generated using an embedded interference-canceling algorithm, as recited in independent claim 1 and similarly recited in independent claims 20 and 21.

Applicants further assert that Khullar et al. does not disclose or suggest constructing a first decision statistic based on a first hypothesized modulation type including interference suppression based on the received signal, as recited in independent claim 9.

Regarding the rejection under 35 U.S.C. § 102, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference" (MPEP §2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)).

Also, regarding the rejection under 35 U.S.C. § 103, To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the reference or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references, when combined, must teach or suggest all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure (MPEP 2142). The prior art must suggest the desirability of the claimed invention (MPEP 2143.01).

Khullar et al. discloses a method and system for blind detection of modulation (col. 1, lines 1-9). A radio front end section 64 receives bursts. A first de-rotation block 68(1) de-rotates a training sequence according to the rotation used for GMSK, while another de-rotation block 68(n) de-rotates the training sequence according to the rotation used for 8-PSK. In addition, other de-rotation blocks 68 can be included if other modulation schemes are used. A

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first synchronization/channel estimation block 70(1) correlates the de-rotated training sequence from the first de-rotation block 68(1) to the known training sequence to calculate a GMSK correlation quality measure and attempts to synchronize the receiving station 60 with the received burst 16, and another synchronization/channel estimation block 70(n) correlates the de-rotated training sequence from the other de-rotation block 68(n) to the known training sequence to calculate an 8-PSK correlation quality measure and attempts to synchronize the receiving station 60 with the received burst 16. These correlation quality measures are then used by a modulation detection unit 72 to determine which modulation scheme was most likely used for the burst 16. Generally, the correlation quality measure with the highest value will indicate that the modulation scheme that corresponds to that correlation quality measure was used for the transmission. Accordingly, the modulation detection unit 72 selects the corresponding modulation scheme for the burst 16 (col. 8, lines 24-67).

Khullar et al. does not disclose or suggest generating a decision statistic based on the received signal the decision statistic generated using an embedded interference-canceling algorithm, as recited in independent claim 1 and similarly recited in independent claims 20 and 21 and such is not asserted by the Office Action.

Additionally, Khullar et al. does not disclose or suggest constructing a first decision statistic based on a first hypothesized modulation type including interference suppression based on the received signal, as recited in independent claim 9, and such is not asserted by the Office Action.

Therefore, Applicants respectfully submit that independent claims 1, 9, 20, and 21 define patentable subject matter. The remaining claims depend from the independent claims and therefore also define patentable subject matter. Accordingly, Applicants respectfully request the withdrawal of the rejections under 35 U.S.C. § 102 and 35 U.S.C. § 103.

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CONCLUSION

Based on the foregoing amendments and remarks, Applicants respectfully submit this application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-28 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

The Commissioner is hereby authorized to deduct any fees arising as a result of this Amendment or any other communication from or to credit any overpayments to Deposit Account No. 50-2117.

Respectfully submitted,



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